

Computer Network Lab



ASSIGNMENT # 01

Submitted By
QASIM ALI (20P-0070)
Submitted to : Hurmat Hidayat
(INSTRUCTOR CS)

DEPARTMENT OF COMPUTER SCIENCE
FAST NATIONAL UNIVERSITY OF COMPUTER
AND EMERGING SCIENCES, PESHAWAR

Session 2020-2024

Experiment 1: Building a Category 6 (CAT 6) Straight-Through Ethernet Network Cable?

Ans :Building a Category 6 (CAT 6) straight-through Ethernet network cable is a useful skill for anyone working with networking equipment. CAT 6 cables are designed to handle high-speed data transfers and are commonly used for wired Ethernet connections in homes and businesses. Here's a step-by-step guide on how to create a CAT 6 straight-through Ethernet cable:

Materials we You:

1. CAT 6 Ethernet cable (unshielded twisted pair - UTP)
2. RJ45 connectors (two for each cable)
3. A crimping tool
4. Cable stripper or a sharp knife
5. A pair of scissors
6. A cable tester (optional but highly recommended)
7. A marker or label maker (optional for cable labeling)

Steps:

1. Prepare the Cable:

- Measure the length you need for your cable and cut it using the scissors. Be sure to leave some extra length for any potential mistakes or future adjustments.
- Use the cable stripper or knife to carefully strip about 1.5 inches (3-4 cm) of the outer jacket from both ends of the cable.

2. Arrange the Wires:

- Inside the cable, you'll find four pairs of twisted wires. Each pair consists of one solid-colored wire and one striped wire. The pairs should be color-coded as follows (from left to right):

- Pair 1: White/Blue and Blue
- Pair 2: White/Orange and Orange
- Pair 3: White/Green and Green
- Pair 4: White/Brown and Brown

3. Straighten and Align the Wires:

- Carefully straighten and align the wires in the order mentioned above. Be sure they are flat and untangled.

4. Insert the Wires into the Connector:

- Take one of the RJ45 connectors and insert the wires into it, making sure each wire goes into its designated slot within the connector. Double-check the order to ensure you have the correct sequence.

Procedure :

Side A For Straight cable :

orange - white
orange
green- white
Blue
Bule- white
green
Brown- White
Brown

Experiment 2: Building a Category 6 (CAT 6) Cross-Over Ethernet Network Cable?

Ans: Building a Category 6 (CAT 6) crossover Ethernet network cable is another useful skill, especially when you need to connect two devices directly without using a network switch or hub. A crossover cable is used for connecting similar devices, like two computers or two switches. Here's a step-by-step guide on how to create a CAT 6 crossover Ethernet cable:

Materials You'll Need:

1. CAT 6 Ethernet cable (unshielded twisted pair - UTP)
2. RJ45 connectors (two for each cable)
3. A crimping tool
4. Cable stripper or a sharp knife
5. A pair of scissors
6. A cable tester (optional but highly recommended)
7. A marker or label maker (optional for cable labeling)

Steps:

1. Prepare the Cable:

- Measure the length you need for your cable and cut it using the scissors. Leave some extra length for any potential mistakes or future adjustments.

- Strip about 1.5 inches (3-4 cm) of the outer jacket from both ends of the cable using the cable stripper or knife.

2. Arrange the Wires:

- Inside the cable, you'll find four pairs of twisted wires, just like in a straight-through cable. However, for a crossover cable, you'll need to reverse the wires in pairs 1 and 3.

- Pair 1 (White/Blue and Blue) remains the same.
- Pair 2 (White/Orange and Orange) remains the same.
- Pair 3 (White/Green and Green) should be reversed: White/Green goes where Green usually goes, and Green goes where White/Green usually goes.
- Pair 4 (White/Brown and Brown) remains the same.

3. Straighten and Align the Wires:

- Carefully straighten and align the wires according to the modified sequence mentioned above. Make sure they are flat and untangled.

4. Insert the Wires into the Connector:

- Take one of the RJ45 connectors and insert the wires into it, ensuring that each wire goes into its designated slot within the connector. Double-check the order to ensure you have the correct sequence.

Procedure :

Side A For Straight cable :

orange - white
orange
green- white
Blue
Bule- white
green
Brown- White
Brown

Side B:

green- white
green
orange- white
blue
bule- white
orange
Brown- White
Brown

